SOV/76-32-8-30/37

An Apparatus for the Automatic Stabilization of the Redox Potentials - the Redoxystat

Prokhorov (Ref 2) was used. The operation principle of the apparatus is based on the fact that a glass stopper with an iron core by the action of the relay by means of an electromagnet causes the reduction liquid to flow from the buret and disconnects the flow again when the potential is reestablished. In this way the reaction can take place at a certain potential and the course of the reaction may be followed according to the amount of the added reducing agent.
There are 1 figure and 2 references, [illegible] which are Soviet.

ASSOCIATION: Khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva, Moskva (Institute of Chemical Technology imeni D. I. Mendeleyev, Moscow)

SUBMITTED: December 25, 1957

Card 2/2

GORBACHEV, S.V

[redacted]

5(4) PHASE I BOOK EXPLOITATION SOV/2216

Soveshchaniye po elektrokhimii. 4th, Moscow, 1956.

Trudy...; [sbornik] (Transactions of the Fourth Conference on Electrochemistry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 868 p. Errata slip inserted. 2,500 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk.

Editorial Board: A.N. Frumkin (Resp. Ed.) Academician, O.A. Yesin, Professor; S.I. Zhdanov (Resp. Secretary), B.N. Kabanov, Professor, S.I. Zhdanov (Resp. Secretary); B.N. Kabanov, Professor; Ya. M. Kolotyrkin, Doctor of Chemical Sciences; V.V. Losev, F.D. Lukovtsev, Professor; Z.A. Solov'yeva; V.V. Stender, Professor; and G.M. Florianovich; Ed. of Publishing House: N.G. Yegorov; Tech. Ed.: T.A. Prusakova.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry.

COVERAGE: The book contains 127 of the 138 reports presented at the Fourth Conference on Electrochemistry sponsored by the Department of Chemical Sciences and the Institute of Physical Chemistry, Academy of Sciences, USSR. The collection pertains to different branches of electrochemical kinetics, double layer theories and galvanic processes in metal electrodeposition and industrial electrolysis. Abridged discussions are given at the end of each division. The majority of reports not included here have been published in periodical literature. No personalities are mentioned. References are given at the end of most of the articles.

Card 26/34

5(2), 5(4) SOV/156-59-1-9/54

AUTHORS: Gorbachev, S. V., Gusev, N. I.

TITLE: The Kinetics of Anodic Dissolution of Copper in a Neutral Electrolyte (Kinetika anodnogo rastvoreniya medi v neytral'nom elektrolite)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Khimiya i khimicheskaya tekhnologiya, 1959, Nr 1, pp 36 - 39 (USSR)

ABSTRACT: According to Vozdvizhenskiy, the anodic dissolution of a metal is a process of electro-decrystallization, a regularly proceeding destruction of the crystal lattice. In the present work the polarization curves were measured at various temperatures and with various concentrations of copper sulfate. The concentration of copper sulfate varied between 0.02 to 0.75 mole/l, the current density between 0.5 to 100 ma/cm^2, temperature between 20° to 70°. Methods and apparatus are described in reference 17 and reference 18. The polarization potentials depend on the convection conditions. Spiral anodes showed higher potentials than plate anodes. With higher potentials (200 - 800 mv) there is a linear relation between

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lg i and $\frac{1}{T}$ (i = current intensity). Increased temperature and sulfate concentration decrease polarization, increase current intensity and accelerate the dissolution. This is explained by increased velocity of the copper ions and decrease of hydration and viscosity. In all solutions investigated and at all temperatures the process is limited by concentration polarization. Phenomena similar to phase polarization occur only in solutions with 0.02 and 0.1 mole $CuSO_4$ at low potentials. Izmaylov (Ref 21) pointed out that the transition from the single-electron process to the double-electron process is accompanied by a duplication of activation energy. The activation energy of concentrated $CuSO_4$ solutions was about 3 kcal/mole, of solutions with 0.02, 0.05 mole $CuSO_4$ about 6 kcal/mole. It may be concluded from these measurements under which conditions copper is mainly dissolved as a monovalent or bivalent ion. Since this is very important in practice, the products of electrolysis should be determined directly.

The Kinetics of Anodic Dissolution of Copper in a Neutral Electrolyte SOV/156-59-1-9/54

There are 4 figures and 21 references, 11 of which are Soviet.

ASSOCIATION: Kafedra fizicheskoy khimii Moskovskogo khimiko-tekhnologicheskogo instituta im. D. I. Mendeleyeva (Chair of Physical Chemistry of the Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: December 19, 1957

Card 3/3

GORBACHEV, S. V.; KHOLPANOV, L. P.

Refinement of the calculation of concentration polarization. (MIRA 13:9)
Trudy MKHTI no.26:18-23 '59.
(Polarization (Electricity))

GORBACHEV, S.V.; GUSEV, N.I.

Study of the anodic processes involved in the solution of copper. Trudy MKHTI no.26:44-56 '59. (MIRA 13:9)
(Copper) (Polarization (Electricity))

GORBACHEV, S. V., ATANASYANTS, A. G.

Activation energy in the kinetics of electrode processes in the electrolysis of $ZnSO_4$ and $CdSO_4$. Trudy MKHTI no.26:57-68 '59. (MIRA 13:9)

(Zinc sulfate) (Cadmium sulfate) (Electrolysis)

ATANASYANTS, A.G.; GORBACHEV, S.V.

Effect of the concentration of complex zinc salts on the kinetics of electrode processes taking place during the deposition and solution of zinc. Trudy MKHTI no.26:69-76 '59. (MIRA 13:9)
(Zinc salts) (Electrodes, Zinc)

GORBACHEV, S.V.; BELEVSKIY, S.F.

Absorption of light and reduction potentials of some organic nitro compounds. Trudy MKHTI no.26:180-190 '59. (MIRA 13:9)
(Nitro compounds) (Electromotive force)

GORBACHEV, S.V.; SYTILIN, M.S.

Redoxystat for chemical synthesis at a given oxidation-reduction potential and for the study of the kinetics of the corresponding reactions. Trudy MKHTI no.26:199-205 '59. (MIRA 13:9)
(Electromotive force) (Oxidation-reduction reaction)
(Chemical apparatus)

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A006/A001

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Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 13(I), p. 74, # 51262

AUTHORS: Gorbachev, S. V., Belevskiy, S. F.

TITLE: Light Absorption Potentials of Some Organic Nitrocompounds Reduction

PERIODICAL: Tr. Mosk. khim.-tekhnol. in-ta im. D. I. Mendeleyeva, 1959, No. 26, pp. 180-190

TEXT: For the purpose of stablishing a correlation between electrochemical and photochemical processes, the authors compare the results of measuring the reduction potentials E (determined from polarization reduction curves on Sn, Cu or Hg cathode) and the ultraviolet spectra of nitromethane (I), nitrobenzene (II), n-nitrotoluene (III), m- and o-nitrophenol (IV and V) α-nitronaphthalene (VI), m and n-nitroaniline (VII and VIII) in aqueous or aqueous-alcohol solutions. The linear dependence between the potential E and the quantum energy (hν) at the longwave absorption edge was revealed; both quantities varied "antibathetically" (antibatno). The quantum energy hν dropped in the I - VIII series. The authors believe that the correlation obtained may be explained on the basis of the

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83488
S/081/60/000/013(I)/002/014
A006/A001

Light Absorption and Potentials of Some Organic Nitrocompounds Reduction

photoreduction mechanism in the presence of an electron donor. Polarization measurements of I at 25 - 55°C yield an effective activation energy value of 4,500 cal. Consequently the concentration polarization is, under the given conditions, the determining factor of the electrode process of reduction of I.

G. Korolev

Translator's note: This is the full translation of the original Russian abstract.

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GORBACHEV, S.V.; SYTILIN, M.S.

Study of the kinetics of acetone iodination by means of a redoxystat. Part 1. Izv.vys.ucheb.zav.; khim.i khim.tekh. 2 no.5:818-821 '59. (MIRA 13:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva, kafedra khimicheskoy khimii.
(Acetone) (Iodination)

5(4)

AUTHORS: Gorbachev, S. V., Belevskiy, S. F. SOV/76-33-5-31/33

TITLE: On the Interrelation Between the Energy of Electron Excitation and the Energy of the Electroreduction of Aromatic Molecules (O sootnosheniyakh mezhdu energiyey elektronnogo vozbuzhdeniya i energiyey elektrovosstanovleniya aromaticheskikh molekul)

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 5, p 1154 (USSR)

ABSTRACT: In their investigation (Ref 2) the authors tried to find a relation between the spectral and the electrochemical characteristics of the reduction of substituted nitrobenzenes, the reduction potential and the energy of the quantum at the adsorption limit: $E_{red} = const - kh\nu$. This assumption is attacked by Z. R. Grabovskiy (Ref 1). The authors admit that the assumption of comparable processes in electroreduction and light absorption of nitro compounds is a hypothesis. But the formula set up is empirically guaranteed and is not disproved by Grabovskiy. There are 2 Soviet references.

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GORBACHEV, S. V.

Effect of temperature on electrolysis as a kinetic method of investigating the nature of electrochemical processes. Trudy MKHTI no.26:3-17 '59. (MIRA 13:9)
(Electrolysis)

S/539/61/000/032/001/017
D202/D301

AUTHORS: Gorbachev, S.V. and Aryamova, I.I.

TITLE: Electrolysis on a rotating disc electrode

SOURCE: Moscow. Khimiko-tekhnologicheskiy institut. Trudy, no. 32, 1961. Issledovaniya v oblasti elektrokhimii, 5-26

TEXT: A detailed analysis of the modern theory of electrolysis under conditions of forced convection which takes place on a rotating disc electrode; the authors state that the theory does not take into account several observed dependences, especially different effects of forced convection in case of concentration polarization and of chemical polarization. As the result of their study, the authors propose an equation for evaluating current intensity under conditions of forced convection in a purely concentration mechanism process, from which it follows that not only, with the increase of electrode's angular velocity "ω", is the current density roughly proportional to $\sqrt{\omega}$, but that the rate of that increase depends on the polarization potential, the electrolyte concentration and

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the temperature. A more general equation is also proposed which takes into account not only the concentration polarization, but the chemical polarization as well. A preliminary method for evaluating the role of normal convection in electrolysis is proposed. The effect of electrode angular velocity on the cathodic reduction of nitromethane and the anodic oxidation of potassium ferrocyanide in a mixture of ferro and ferri ions was investigated. In both reactions, a purely concentration polarization takes place, with a linear dependence of current density on $\sqrt{\omega}$. The authors also studied the effect of the electrode rotation rate in the electrolysis of halides, in which case the chemical polarization is the main factor. It was found that at low polarization potentials the rotation rate does not affect the current intensity; with rising potential, higher angular velocity causes at first a higher current intensity; further velocity increase affects it only slightly. At a limiting current a linear dependence: $i = \sqrt{\omega}$ is observed which is characteristic for a purely concentration polarization. Study of the anodic oxidation of benzyl alcohol has shown that the increase in ω does not cause an increase in the

Electrolysis on a rotating ...

rate of electrolysis, but causes its decrease; in the authors' opinion this is due to the formation of free radicals. Full experimental details are given. The presented theoretical considerations on the basis of experimental results are considered to express adequately the importance of concentration polarization in complex electrode reactions. There are 12 figures and 10 references: 7 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows: King, J.Am.Chem.Soc., 57, 1212 (1935).

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S/539/61/000/032/006/017
D202/D301

AUTHORS: Gorbachev, S.V. and Mil'chev, V.A.

TITLE: Electrolysis at high temperatures

SOURCE: Moscow. Khimiko-tekhnologicheskiy institut. Trudy, no. 32, 1961. Issledovaniya v oblasti elektrokhimii, 91-99

TEXT: The authors studied the kinetics of electrochemical reactions in a wide range of temperatures (up to 200°C). The authors aimed to determine if the same regularities are to be found at higher temperatures. Their experiments were carried out on ferrous ferric sulphates and ferro-ferricyanides in equimolar solutions in the first experimental series, and on electro deposition of silver from its complex iodide solutions (0.1 m Ag + 2.5 m KI) in the second series. Full experimental details are given. The quantitative interpretation of results of the first series was based on the equation proposed by O.B. Khachaturyan on the assumption that in these reactions only concentration polarization takes place (Ref. 21: Dissertatsiya, Mkhti im. D.I. Mendeleyeva, 1958 (Dissertation,

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Electrolysis at high temperatures

Moscow Institute of Chemical Technology, im. D.I. Mendeleyev, 1958)). The results obtained in this experimental series proved that concentration polarization is the limiting factor in the whole temperature range. In the second experimental series, two kinds of polarization were observed: In a temperature range of 20-100°C in the cathodic process, and in that of 20-80°C in the anodic process, the chemical polarization being the limiting factor and causing marked changes in A_{ef}. With rising temperature and the increase of polarization potential to 0.025-0.03 v the chemical polarization is replaced by the concentration one, and a further rise in potential has but little effect on A_{ef}. There are 13 figures and 33 references: 23 Soviet-bloc and 10 non-Soviet bloc. The reference to the English-language publication reads as follows: S. Senderoff and A. Brenner, J. Electrochem. Soc., 97, 361, (1950).

GORBACHEV, S.V.; SYTILIN, M.S.

Study of the kinetics of hydroquinone oxidation with the aid of a redoxystat. Izv.vys.ucheb.zav.; khim.i khim.tekh. 4 no.1:155-157 '61. Izv.vys.ucheb.zav.; khim.i khim.tekh. 4 no.4:155-157 '61. (MIRA 14:6)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva, kafedra fizicheskoy khimii.
(Hydroquinone) (Oxidation-reduction reaction)

SYTILIN, M.S.; GORBACHEV, S.V.

Iodination kinetics of acetone studied by means of a redoxistat. Izv.vys.ucheb.zav; khim.i khim.tekh. 4 no.5:755-759 '61. (MIRA 14:11)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva, kafedra fizicheskoy khimii.
(Acetone) (Iodination)

S/076/61/035/003/021/023
B121/B206

AUTHORS: Kondrat'yev, V. P. and Gorbachev, S. V.

TITLE: Procedure and apparatus for measurements of electrical conductivity and polarization potentials in electrolysis of aqueous solutions at high temperatures

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 3, 1961, 671-676

TEXT: According to the principle of maintaining constant the composition of the solution to be investigated, the authors designed an electrolytic cell for use in determining the electrical conductivity. The cell for electrolysis and measurement of electrode polarization consists of 3 parts: an inversely U-shaped electrolysis vessel made of quartz with 2 sealed in platinum electrodes, a cell with the reference electrode, and a stopper which simultaneously acts as key switch. The cell used to determine the electrical conductivity contains no cell with a reference electrode. When conducting the electrolysis, the cell is put into an autoclave of 1.5 l capacity. The autoclave is made of stainless chrome-nickel steel of the type 1Kh18N9T (ЭЯ-1Т) (1Kh18N9T (EYa-1T)). In the investigation of the electrical con-

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ductivity, the temperature is determined with an accuracy of $\pm 0.25^{\circ}C$, and in the electrolysis with an accuracy of $\pm 1^{\circ}C$. The autoclave has an outside diameter of 130 mm, an inside diameter of 80 mm, and withstands hydraulic pressures of up to 501 kg/cm^2 and temperatures of $340^{\circ}C$ and more. The autoclave is sealed by conic connections of the metal-metal type. The temperature is measured by a Chromel-Alumel thermocouple which is placed in a protective tube with diffusion oil of the "A" type. The design of the autoclave used to determine the electrical conductivity and of the heater of the autoclave is similar to that described by I. M. Rodnyanskiy and I. S. Galinker (Ref. 3: I. M. Rodnyanskiy, I. S. Galinker, Dokl. AN SSSR, 105, 1955; Ref. 4: I. M. Rodnyanskiy, Dissertatsiya, Khar'kov, 1954); only the temperature measurement and electric supply lines are different. The electrical conductivity of 1 M KCl solutions was investigated. The method proposed permits the determination of the electrical conductivity at a constant composition of the solutions to be investigated and at increasing or constant temperature, but not on a quick temperature decrease. A method for determining the potentials in aqueous solutions at high temperatures was proposed. V. A. Mil'chev (Ref. 9: Izv. Vuz. MVO SSSR (Khim.), no. 2, 114, 1958; Ref. 10: Dissertatsiya, Moskva, 1958) and N. Larionov (Ref. 13:

Procedure and ...

Dissertatsiya, MOPI, 1951) are mentioned in connection with the design of the electrolytic cell. There are 5 figures and 18 references: 10 Soviet-bloc and 8 non-Soviet-bloc. The four references to English-language publications read as follows: M. H. Lietzke and R. W. Stoughton, J. Amer. Chem. Soc., 75, 5226, 1953; M. H. Lietzke, J. V. Vanghen, J. Amer. Chem. Soc., 77, 876, 1955; S.Senderoff, A. Brenner, J. Electrochem. Soc., 97, 361, 1950; J. N. Ager, W. G. Breck, Nature, 175, 298, 1955.

ASSOCIATION: Khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: September 6, 1960

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GORBACHEV, S.V.; DUNIN, A.I.

Effect of the flow rate on the process of electrolysis. Zhur. fiz. khim. 35 no.3:697-698 Mr '61. (MIRA 14:3)

1. Moskovskiy khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva.
(Electrolysis)

GORBACHEV, S.V.; DUNIN, A.I.

Effect of the viscosity of water-glycerol solutions on the electrochemical kinetics of ferri-ferrocyanides. Zhur. fiz. khim. 35 no.5:1019-1025 My '61. (MIRA 16:7)

1. Khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva, Moskva.

(Ferrocyanides) (Electrochemistry)
(Glycerol)

GORBACHEV, S.V.; KONDRAT'YEV, V.P.

Specific electric conductivity of potassium chloride aqueous solutions at high temperatures. Zhur.fiz.khim. 35 no.6:1235-1239 Je '61. (MIRA 14:7)

1. Khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.
(Potassium chloride) (Electric conductivity)

GORBACHEV, S.V.; BELYAYEVA, V.A.

Electrooxidation - electroreduction of the system iodine - iodide.
Zhur.fiz.khim. 35 no.9:2158-2162 '61. (MIRA 14:10)

1. Khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.
(Iodine) (Iodides)
(Oxidation-reduction reaction)

28296

S/076/61/035/010/015/015
B106/B110

AUTHORS: Gorbachev, S. V., and Kondrat'yev, V. P.

TITLE: Electrolysis in aqueous solutions at high temperatures

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 10, 1961, 2400 - 2401

TEXT: The kinetics of electrodic processes in systems with concentration and chemical polarizations was studied by plotting the polarization curves in the temperature range of 25 - 300°C. Electrolysis was performed in a quartz cell according to a method previously described (Ref. 1: V. P. Kondrat'yev i S. V. Gorbachev. Zh. fiz. khimii, 35, 671, 1961). The equipotentials of the logarithm of the electrode reaction rate as a function of the reciprocal absolute temperature were found to be characterized in many cases by curves with a maximum in the temperature range of 220 - 270°C. Fig. 1 shows the curves log i = f(1/T) of the cathodic deposition of silver from its bromide complex in an electrolyte of the following composition: 0.04 m AgBr, 4.5 m KBr (m - molarity). It may be seen that the acceleration of the cathodic deposition of silver decreases more and more with rising temperature, until a maximum value is attained at a

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certain temperature. Further rise in temperature does no longer accelerate the process but retards it. Similar curves are known to characterize also the electrical conductivity of solutions of strong electrolytes (Ref. 2: A. A. Noyes, W. D. Coolidge, Z. phys. Chem., 46, 323, 1903). This phenomenon is apparently mainly due to an association of ions at high temperatures, since aqueous solutions of strong electrolytes having a density of < 0.7 g/cm^3 exhibit the properties of solutions of medium or even weak electrolytes (Ref. 3: E. U. Frank, Z. phys. Chem., 8, 92, 107, 192, 1956). Also the increase of the hydration number of ions at high temperatures, which was found by I. M. Rodnyanskiy and I. S. Galinker (Ref. 4: Zap. Khar'k. s.-kh. in-ta, 14, 43, 1957; Tr. Khar'k. otd. VKhO im. D. I. Mendeleyeva, 1, 135, 1958), as well as the decrease of volume concentration of the electrolyte probably play an important part in the formation of the maximum of the curves log i = f(1/T). The total increase of the rate of cathodic deposition of silver with rising temperature is not high. The maximum rate is about a little more than five times the rate at room temperature. The effective activation energy determined from the initial part of the curve log i = f(1/T) is 3080 cal/mole, which may be regarded as a limiting stage of the transport process of the substance.

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Electrolysis in aqueous...

The polarization curves in the cathodic deposition of nickel from a solution with 0.1 m $Ni(H_3C_2O_2)_2$ and 2 m $H(H_3C_2O_2)$ could be plotted only up to 270°C, since nickel hydroxide precipitates at higher temperatures owing to hydrolysis. Fig. 2 shows the corresponding equipotentials which are also curves with a maximum. The ascent of the initial, linear sections of the curves decreases with increasing polarization potential (equipotentials 0.6; 0.8; 1.0 v), which indicates the occurrence of chemical polarization. It may be seen from Fig. 2 that the rate of the process at a polarization of 0.2 v increases by about three orders of magnitude, when the temperature rises from 25 to 240°C. This effect of temperature on the rate of an electrochemical reaction with high activation energy is comparable with the effect of a catalyst. [Abstracter's note: Complete translation.] There are 2 figures and 4 references: 2 Soviet and 2 non-Soviet.

ASSOCIATION: Khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva
(Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: April 26, 1961

Card 3/3

BEGUNOV, G.A.; GORBACHEV, S.V.

Electrochemical processes on an alternatingly polarized electrode. Part 1: Description of the unit and general instructions. Zhur.fiz.khim. 35 no.11:2636-2638 N '61. (MIRA 14:12)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

(Electrochemistry)

GORBACHEV, S.V.; BELYAYEVA, V.A.

Electrolytic reduction-oxidation of the Mn^{3+} - Mn^{2+} system. Part 1. Zhur. fiz. khim. 36 no.1:229-233 Ja '62. (MIRA 16:8)

1. Khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva.
(Manganese compounds) (Electrochemistry)

BELEVSKII, S.F.; GORBACHEV, S.V.

Electrochemical oxidation and absorption spectra of halogen ions. Zhur. fiz. khim. 36 no.4:742-746 Ap '62. (MIRA 15:6)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva. (Halogens--Spectra) (Oxidation, Electrolytic)

KHOLPANOV, L.P.; GORBACHEV, S.V.

Electro-oxidoreduction of reversible redox systems on a rotating disc electrode. Part 1. Effect of rotation and concentration on the electrolysis rate. Zhur. fiz. khim. 36 no.4:855-859 Ap '62. (MIRA 15:6)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.
(Oxidation, Electrolytic) (Reduction, Electrolytic)
(Electrodes)

GORBACHEV, S.V.; KHOLPANOV, L.P.

Electro-oxidoreduction of reversible redox systems. Part 2. Application of the temperature-kinetic method to the electrolysis of ferro-ferricyanides on a rotating disc electrode. Zhur. fiz. khim. 36 no.4:859-862 Ap '62. (MIRA 15:6)

1. Khimiko-tekhnologicheskiy institut imeni Mendeleyeva.
(Electrolysis) (Ferricyanides) (Electrodes)

KHOLPANOV, L.P.; GORBACHEV, S.V.

Electrooxidation-electroreduction of redox systems. Part 3: Rate of electrolysis as dependent on the ratio between the concentrations of oxidized and reduced forms in iron cyanide solutions. Zhur.fiz.khim. 36 no.5:1074-1077 My '62. (MIRA 15:8)

1. Khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.
(Ferricyanides) (Ferrocyanides) (Electrolysis)

GORBACHEV, S.V.; POZHIDAYEV, Ye.D.

Effect of the redox potential on the direction of reactions in solutions. Part 1: Potentiometric investigation of tartaric acid stepped oxidation. Zhur.fiz.khim. 36 no.5:1094-1096 My '62. (MIRA 15:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva.
(Tartaric acid) (Oxidation-reduction reaction)
(Potentiometric analysis)

GORBACHEV, S.V.; BELYAYEVA, V.A.

Electrooxidation-electroreduction of complex di-trivalent iron salts. Part 2: Dependence of the rate of electrolysis on the composition. Zhur.fiz.khim. 36 no.8:1794-1797 Ag '62. (MIRA 15:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.
(Oxidation-reduction reaction) (Electrolysis) (Iron compounds)

BEGUNOV, G.A.; GORBACHEV, S.V.

Electrochemical processes on an alternating-polarizing electrode. Part 2. Zhur. fiz. khim. 36 no.9:2062-2066 S '62. (MIRA 17:6)

1. Khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

GORBACHEV, S.V.; KONDRAT'YEV, V.P. (Moscow)

Electrolysis in aqueous solutions at high temperatures. Zhur.fiz.khim. 36 no.10:2162-2168 O '62. (MIRA 17:4)

1. Khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

POZHIDAYEV, Ye.D.; GORBACHEV, S.V.

Effect of the redox potential on the course of reactions in solutions. Part 2. Zhur. fiz. khim. 36 no.11:2512-2515 N'62. (MIRA 17:5)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

SHMIDT, E. M.; GORBACHEV, S. V.

Determination of the effective activation energy in the cathodic reduction of quadrivalent cerium in an acid medium. Zhur. fiz. khim. 36 no.12:2795-2798 D '62. (MIRA 16:1)

1. Khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

(Cerium compounds) (Reduction, Electrolytic)
(Polarization(Electricity))

BURMISTROVA, Ol'ga Aleksandrovna; KARAPET'YANTS, Mikhail Khristoforovich, prof.; KARETNIKOV, German Sergeyevich, dots.; KISELEVA, Yekaterina Vasil'yevna, dots.; KUDRYASHOV, Igor' Vladimirovich, dots.; MIKHAYLOV, Vladimir Vasil'yevich, dots.; STAROSTENKO, Yekaterina Pavlovna, dots.; STREL'TSOV, Igor' Sergeyevich; KHACHATURYAN, Ol'ga Borisovna, dots.; GORBACHEV, S.V., doktor khim. nauk, prof., zasl. deyatel' nauki i tekhniki, red.; ALAVERDOV, Ya.G., red.; VORONINA, R.K., tekhn. red.

[Laboratory work in physical chemistry] Praktikum po fizicheskoi khimii. [By] O.A.Burmistrova i dr. Moskva, Vysshaia shkola, 1963. 553 p. (MIRA 16:11)
(Chemistry, Physical and theoretical—Laboratory manual)

S/076/63/037/001/021/029
B101/B186

AUTHORS: Gorbachev, S. V., Belyayeva, V. A.

TITLE: Electrooxidation and electroreduction of the system Mn^{3+}/Mn^{2+}. II. Dependence of the rate of electrolysis on its composition

PERIODICAL: Zhurnal fizicheskoy khimii, v. 37, no. 1, 1963, 197 - 201

TEXT: The polarization curves of the system Mn^{3+} - Mn^{2+} were plotted, Mn^{3+} being stabilized as pyrophosphate complex $\left[Mn(H_2P_2O_7)_3\right]^{3-}$. The measurements were made at constant total concentration $[Mn^{3+}] + [Mn^{2+}] = 0.024$ M, ratio $[Mn^{3+}]:[Mn^{2+}] = 7:1$ to 1:7, and at a rotational speed n of the platinum disc electrode varying between 360 and 3000 rpm at 40.5°C, as well as with n = 0 at 20.3°C. The dependences amp. I (μa) versus $[Mn^{2+}]$ for the anodic process, and I versus $[Mn^{3+}]$ for the cathodic process, were plotted from the polarization curves. Results: In both anodic and cathodic process the curves I versus concentration pass through a maximum. In purely chemical polarization the maximum corresponds to the ratio 1:1 of the components

Card 1/2

Electrooxidation and...

$[Mn^{2+}]$ and $[Mn^{3+}]$. If in addition partial or pure concentration polarization occurs, the maximum shifts with increasing polarization potential toward the increasing concentration of Mn^{3+} in the cathodic process and toward the increasing concentration of Mn^{2+} in the anodic process. Further, the maximum depends on temperature, e.g. at 40.5°C, $\Delta\varphi$ = 300 mv, the cathodic maximum lies near ~100 μa, ~0.018 mole/l Mn^{3+}; at 20.3°C, $\Delta\varphi$ = 300 mv, it is positioned near ~70 μa, ~0.014 mole/l Mn^{3+}. Also, I is a linear function of the square root from the angular velocity of the electrode. There are 5 figures.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D. I. Mendeleyeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: November 23, 1961

GORBACHEV, S.V.; ZOTOV, N.A.

Effect of complex formation on the kinetics of electroreduction of copper dichloride in various solvents. Zhur. fiz. khim. 37 no.6:1391-1393 Je '63. (MIRA 16:7)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

(Complex compounds) (Copper chlorides)
(Reduction, Electrolytic)

BEGUNOV, G.A.; GORBACHEV, S.V.

Electrochemical processes on an alternating polarizing electrode. Part 4. Zhur. fiz. khim. 38 no.3:785-788 Mr '64. (MIRA 17:7)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

GORBACHEV, S.V.; KRAVCHINSKIY, A.F.

Possibility of absolute measurements of the rates of electrochemical reactions. Zhur. fiz. khim. 38 no.3:789-793 Mr '64. (MIRA 17:7)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

GORBACHEV, S. V.

"Experimental Investigation of the Kinetics of Electrochemical Reactions over a Wide Temperature Range."

Report presented at the 14th meeting CITCE, Intl. Comm. of Electrochemical Thermodynamics and Kinetics, Moscow, 19-25 Aug 63.

Mendeleev Chemico-Technological Institute, Moscow, USSR.

GORBACHEV, S.V.; BELYAYEVA, V.A.

Electrooxidation - electroreduction of the system Mn^{3+}/Mn^{2+}.
Part 2. Zhur.fiz.khim. 37 no.1:197-201 Ja '63. (MIRA 17:3)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

GORBACHEV, S. V.; ABOIMOV, A. M.

Kinetics of electrochemical redox processes of some organic compounds in acetic acid at high temperatures. Zhur. fiz. khim. 37 no. 3:696-698 Mr '63. (MIRA 17:5)

1. Khimiko-tekhnologicheskiy institut imeni D. I. Mendeleyeva.

GORBACHEV, S.V.; ZOTOV, N.A.

Kinetics of the electroreduction of cupric chloride in non-aqueous solvents. Zhur. fiz. khim. 37 no.4:924-927 Ap '63. (MIRA 17:7)

1. Khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

GURINOV, Yu.S; GORBACHEV, S.V.

Effect of the velocity of electrolyte flow on the electrochemical kinetics at various activation energies of the electrode reaction. Zhur. fiz. khim. 37 no.5:1141-1143 My '63. (MIRA 17:1)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

ZOTOV, N.A.; GORBACHEV, S.V.

Effect of temperature on the rate of cathodic reduction of copper dichloride in various solvents. Zhur.fiz.khim. 37 no.7:1606-1609 Jl '63. (MIRA 17:2)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

GORBACHEV, S.V.; SHMIDT, E.M.Z.

Unusual values of effective activation energy in concentration polarization. Zhur.fiz.khim. 37 no.8:1877-1880 Ag '63. (MIRA 16:9)

1. Moskovskiy khimiko-tekhnologicheskiy institut im. D.I.Mendeleyeva.
(Polarization (Electricity)) (Chemical reaction, Rate of)

IVANOVSKAYA, L.N.; GORBACHEV, S.V.

Effect of solvents on the kinetics of electrochemical oxidation-reduction reactions. Part 1. Zhur.fiz.khim. 37 no.10:2305-2308 O '63. (MIRA 17:2)

1. Khimiko-tekhnologicheskiy institut imeni Mendeleyeva, Moskva.

DZHABAROV, F.Z.; GORBACHEV, S.V.

Vanadium (V) compounds in solutions. Zhur. neorg. khim. 9 no.10: 2399-2402 O '64. (MIRA 17:12)

1. Khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva.

DUBININ, M.M.; GORBACHEV, S.V.; POLUKAROV, Yu.M.; CHMUTOV, K.V.

Scientific activity of professor Kseniia Mikhailovna Gorbunova, doctor of chemical sciences; 1904-; on her sixtieth birthday. Zhur.fiz.khim. 38 no.8:2114-2115 Ag '64. (MIRA 18:1)

GURINOV, Yu.S.; GORBACHEV, S.V.

Effect of the electrolyte flow within wide velocity range on the electrooxidation-electroreduction of the system $K_3[Fe(CN)_6]$-$K_4[Fe(CN)_6]$. Part 1. Zhur. fiz. khim. 38 no.9:2245-2250 S '64. (MIRA 17:12)

1. Khimiko-tekhnologicheskiy institut imeni Mendeleyeva, Moskva.

ZOTOV, N.A.; GORBACHEV, S.V.

Electrodeposition of copper from solutions of its chloride complexes in n-C_3H_7OH. Zhur. fiz. khim. 38 no.9:2302-2304 S '64. (MIRA 17:12)

1. Khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

GORBACHEV, S.V.; ZOTOV, N.A.

Electrodeposition of copper from solutions of its chloride complexes in CH_3OH. Zhur. fiz. khim. 38 no.10:2499-2501 O '64.
(MIRA 18:2)

1. Khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

ZOTOV, N.A.; GORBACHEV, S.V.

Electrodeposition of copper from its chloride solutions in acetic acid and pyridine. Zhur. fiz. khim. 38 no.10:2501-2503 O '64.
(MIRA 18:2)

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NIKICH, V.I.; GORBACHEV, S.V.

Specific gravity of electrolyte solutions in anhydrous acetic acid at high temperatures. Trudy MKHTI no.44:41-44 '64.
(MIRA 18:1)

Specific conductivity of electrolyte solutions in anhydrous acetic acid at high temperatures. Ibid.:45-49

IVANOVSKAYA, L.N.; GORBACHEV, S.V.

Effect of nonaqueous organic solvents on the kinetics of electrochemical redox reactions. Trudy MKHTI no.44:50-58 '64.

(MIRA 18:1)

Effect of the nature of solvents on the kinetics of electrochemical oxido-reduction. Electrolytic oxidation-reduction of the system I_2 - I_3I in water. Ibid.:59-62

GORBACHEV, S.V.; KONDRAT'YEV, V.P.

Electrolysis in aqueous solutions at high temperatures. Part 2. Zhur. fiz. khim. 38 no.6:1557-1563 Je '64.

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1. Khimiko-tekhnologicheskiy institut imeni Mendeleyeva, Moskva.

DZHABAROV, F.Z.; GORBACHEV, S.V.

Study of the electrode processes in the redox system V(V) - V(IV) by the temperature-kinetic method. Zhur. fiz. khim. 38 no.6: 1672-1675 Je '64. (MIRA 18:3)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

POZHIDAYEV, Ye.D.; GORBACHEV, S.V. (Moscow)

Effect of the redox potential on the direction of reactions in solution. Part 3: Products of the oxidation of tartaric acid at various redox potentials. Zhur. fiz. khim. 38 no.12:2938-2941 D '64. (MIRA 18:2)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

DZHABAROV, F.Z.; GORBACHEV, S.V.

Effect of hydrogen-ion concentration on the kinetics of electrode reactions in the oxidation-reduction system V(V) - V(IV). Zhur. fiz. khim. 38 no.5:1334-1337 My '64. (MIRA 18:12)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva. Submitted July 1, 1963.

KHOLPANOV, L.P.; GORBACHEV, S.V.

Electrolytic oxidation-reduction of reversible redox systems. Part 4: Effect of rotation rate and electrolyte concentration on the electrolyses rate in the system ferry-ferrosulfates. Zhur. fiz. khim. 38 no.12:3016-3020 D '64.

Electrolytic oxidation-reduction of reversible redox systems. Part 5: Use of the temperature-kinetic method in the electrolysis of ferry-ferrosulfates on a rotating disk electrode. Ibid.:3020-3024

Electrolytic oxidation-reduction of reversible redox systems. Part 6: Dependence of electrolysis rate on the rates of the concentrations of oxidized and reduced forms in ferry-ferrosulfate solutions on a rotating electrode. Ibid.:3024-3028
(MIRA 18:2)

1. Moskovskiy khimiko-tekhnologicheskiy institut i Tul'skiy politekhnicheskiy institut.

POZHIDAYEV, Ye.D.; GORBACHEV, S.V.

Effect of the oxido-reduction potential on the course of reactions in solution. Part 4. Zhur.fiz.khim. 39 no.7:1678-1684 Jl '65. (MIRA 18:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

GORBACHEV, S.V.; GURINOV, Yu.S.

Effect of electrolyte stream in a wide range of velocities on the electrooxidation-electroreduction of the system $K_3[Fe(CN)_6]/K_4[Fe(CN)_6]$. Part 2. Zhur.fiz.khim. 39 no.7:1712-1718 Jl '65.

(MIRA 18:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

GORBACHEV, S.V.; KOROSTELIN, Yu.A.

Kinetics of electrochemical oxidation in the system KI - I_2 - HCl. Zhur. fiz. khim. 39 no.6:1469-1475 Je '65.
(MIRA 18:11)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva. Submitted July 15, 1964.

KOROSTELIN, Yu.A.; GORBACHEV, S.V.

Effect of temperature and forced convection on the rate of electrooxidation in the system KI - I_2 - HCl. Zhur.fiz.khim. 39 no.7:1773-1777 Jl '65. (MIRA 18:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

IZMAILOV, F.Z.; GORBACHEV, S.V.

Oxidation kinetics of citric acid by pentavalent vanadium compounds. Zhur. fiz. khim. 39 no.9:2198-2201 S '65. (MIRA 18:10)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

POZHIDAYEV, Ye.D.; GORBACHEV, S.V.

Method of directional oxidation of organic compounds. Zhur. prikl.khim. 38 no.11:2529-2533 N '65. (MIRA 18:12)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva. Submitted November 28, 1963.

KONDRAT'YEV, V.P.; GORBACHEV, S.V.

Conductance of aqueous solutions at high temperatures. Zhur. fiz.khim. 39 no.11:2753-2756 N '65. (MIRA 18:12)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

SEMENIKHIN, A.M.; GORBACHEV, S.V.

Effect of the flow rate on the kinetics of electroreduction of nitrobenzene-m-sulfonic acid. Zhur.fiz.khim. 39 no.11:2769-2772 N '65. (MIRA 18:12)

1. Moskovskiy khimiko-tekhnicheskiy institut imeni D.I. Mendeleyeva.

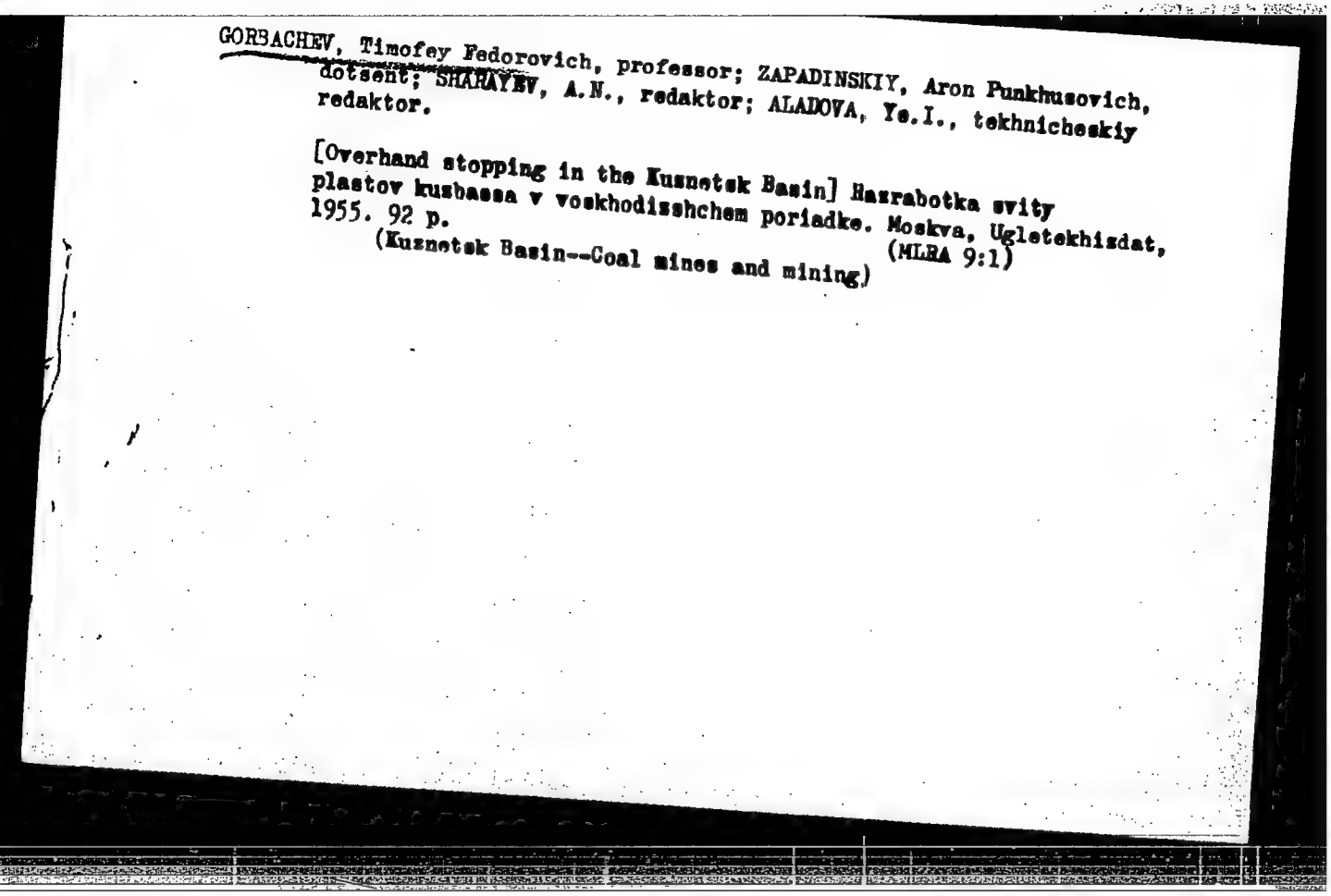
GORBACHEV, T. F.; KUFAREV, F. P.; PATRUSHEV, I. S.; VOROB'YEV, V. I.

"Effectiveness of Tests with Soviet Kuzbass Combine," Mekhanizatsiya Trudoyemkikh i Tyazhelykh Rabot, No 4, 1950.

Translation, W-13871, 25 Sep 50

CHINAKAL, N.A., professor, redaktor; GORBACHEV, T.F., professor, redaktor; BIRYUKOV, R.A., inzhener, redaktor; ZIMIN, A.F., redaktor; PROZOROVSKAYA, V.L., tekhnicheskiy redaktor; ALADOVA, Ye.I., tekhnicheskiy redaktor

[Improving the sheild system in mining; from materials of the Prokop'yevsk meeting of November 15-16, 1952] Sovershenstvovanie shchitovoi sistemy razrabotki; po materialam soveshchaniia, sostoiavshegosia v Prokop'evske 15-16 noiabria 1952 g. Ugletekhizdat, Moskva, 1954. 171 p. (MLRA 8:4)
(Coal mines and mining)



GORBACHEV, Timofey Fedorovich, professor; ZAPADINSKIY, Aron Punkhusovich, dotsent; SHAMAYEV, A.N., redaktor; ALADOVA, Ye.I., tekhnicheskiy redaktor.

[Overhand stopping in the Kuznetsk Basin] Razrabotka svity plastov kuzbassa v voskhodiasshchem poriadke. Moskva, Ugletekhizdat, 1955. 92 p. (MLRA 9:1)
(Kuznetsk Basin--Coal mines and mining)

GORBACHEV, T.F., prof., red.; MEN'SHIKOV, P.N., red.izd-va; CHIKOV, A.M., tekhn.red.

[Rotary percussion drilling. Percussion drills] Udarno-vrashchatel'noe burenie. Mashiny udarnogo deistviia. Pod obshchei red. T.F. Gorbacheva. Novosibirsk, Novosibirskoe knizhnoe izd-vo, 1956. 86 p. (MIRA 14:1)

1. Akademiya nauk SSSR. Zapadno-Sibirskiy filial, Novosibirsk. Gorno-geologicheskiy institut. 2. Predsedatel' Prezidiuma Zapadno-Sibirskogo filiala AN SSSR (for Gorbachev).
(Boring machinery)

GORBACHEV, T.P., professor.

Congress on mining and metallurgy in France. Ugol' 31 no.4:41-46 Ap '56. (MLRA 9:7)

(France--Mining engineering--Congresses)

GORBACHEV, Timofey Fedorovich; PARUSIMOV, V.F., otv.red.; KHODAKOV, I.K., red.izd-va; KONOVENKOVA, Z.A., tekhn.red.

[Mining thick coal seams in U.S.S.R. and abroad] Opyt razrabotki moshchnykh plastov v SSSR i za rubezhom. Moskva, Ugletekhizdat, 1957. 55 p. (MIRA 12:12)

(Coal mines and mining)

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GORBACHEV, T.F.; KOZHEVIN, V.O.; KARPENKO, Z.G.; MOLCHANOV, I.I.; POPOV, V.E.; SOKOLOV, V.D.; SHELKOV, A.A., otvetstvennyy red.; RATNIKOVA, A.P., red.izd-va; EHRLOV, A.P., tekhn.red.; MADEINSKAYA, A.A., tekhn.red.

[Kuznetsk Coal Basin] Kuznetskii ugol'nyi bassein. Ugletekhizdat, 1957. 199 p. (MIRA 11:2)
(Kuznetsk Basin--Coal mines and mining)

GORBACHEV, T.P.

The development of industrial forces and the growth of science in Western Siberia. Izv. vost. fil. AN SSSR no.10:18-26 '57. (MIRA 10:11)

1. Zapadno-Sibirskiy filial AN SSSR.
(Siberia, Western--Industry)

POSPELOV, G.L., starshiy nauchnyy sotrudnik; LAPIN, S.S.; BELOUS, N.Kh.; KLYAROVSKIY, V.M.; KINE, O.G.; VAKHRUSHEV, V.A.; SHAPIRO, I.S., starshiy nauchnyy sotrudnik; KALUGIN, A.S.; MUKHIN, A.S.; GARUNTS, N.A.; SPEYT, Yu.A.; SELIVERSTROVA, M.I.; RUTKEVICH, V.G.; BYKOV, G.P.; NIKONOV, N.I.; SAKOVICH, K.G.; MEDVEDKOV, V.I.; ALADYSHKIN, A.S.; PAN, F.Ya.; RUSANOV, M.G.; YAZBUTIS, E.A.; ROZHDESTVENSKIY, Yu.V.; SAVITSKIY, G.Ye.; PRODANCHUK, A.D.; LYSENKO, P.A.; LEBEDEV, T.I.; KAMENSKAYA, T.Ya.; MASLENNIKOV, A.I.; PIPAR, R.; DODIN, A.L.; MITROPOL'SKIY, A.S.; LUKIN, V.A.; ZIMIN, S.S.; KOREL', V.G.; DERBIKOV, I.V.; BARDIN, I.P., akademik, nauchnyy red.; GORBACHEV, T.F., nauchnyy red.; YEROFEYEV, N.A., nauchnyy red.; NEKRASOV, I.N., nauchnyy red.; SKOBNIKOV, M.L., nauchnyy red.; SMIRNOV-VERIN, S.S., nauchnyy red. [deceased]; STRUMILIN, S.G., akademik, nauchnyy red.; KHLEBNIKOV, V.B., nauchnyy red.; CHINAKAL, N.A., nauchnyy red.; SLEDZYUK, P.Ye., red.toma; SOKOLOV, G.A., red.toma; BOLDYREV, G.P., red.; VOGMAN, D.A., red.; KASATKIN, P.F., red.; KUDASHEVA, I.G., red.izd-va; KUZ'MIN, I.F., tekhn.red.

[Iron-ore deposits of the Altai-Sayan region] Zhelezorudnye mestorozhdeniia Altae-Saianskoi gornoi oblasti. Vol.1. Book 1. [Geology]

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POSPELOV, G.L.---(Continued) Card 2.
Geologiia. Otvetstvennyi red. I.P. Bardin. Moskva. 1958. 330 p.
(MIRA 12:2)
1. Akademiya nauk SSSR. Mezhduvedomstvennaya postoyannaya komissiya po zhelezu. 2. Postoyannaya mezhduvedomstvennaya komissiya po zhelezu Akademii nauk SSSR (for Pospelov, Shapiro, Sokolov). 3. Zapadno-Sibirskiy filial Akademii nauk SSSR (for Vakhrushev, Pospelov.) 4. Zapadno-Sibirskoye geologicheskoye upravleniye (for Sakovich). 5. Krasnoyarskoye geologicheskoye upravleniye (for Pan). 6. Zapadno-Sibirskiy geologo-razvedochnyy trest Chermetrazvedka (for Prodanchuk). 7. Sibirskiy geofizicheskiy trest (for Pipar). 8. Vsesoyuznyy geologicheskiy nauchno-issledovatel'skiy institut (for Dodin). 9. Gornaya ekspeditsiya (for Mitropol'skiy). 10. Gornoye upravleniye Kuznetskogo metallurg.kombinata (for Lukin). 11. Tomskiy politekhnicheskiy institut (for Zimin). 12. Sibirskiy metallurg.institut (for Korel'). 13. Trest Sibneftegeofizika (for Derbikov). (Altai Mountains--Iron ores) (Sayan Mountains--Iron ores)

GORBACHEV, T.F.

AVERSHIN, S.G., prof., dokt.tekhn.nauk; ANAN'IN, G.P., dotsent, kand.tekhn. nauk; BARANOV, A.I., dotsent, insh.; BERLIN, A.Ye., insh.; BOCHKAREV, V.G., kand.tekhn.nauk; BUTKEVICH, R.V., kand.tekhn.nauk; VESELOVSKIY, V.S., prof.,doktor tekhn.nauk; VESKOV, M.I., kand. tekhn.nauk; VOL'KENAU, A.V., kand.tekhn.nauk; GANKAVI, S.M., kand.tekhn.nauk; GORBACHEV, T.F.; DAVIDYANTS, V.T., kand.tekhn.nauk; DMITRIYEV, M.P., kand.tekhn.nauk; DOBROVOL'SKIY, V.V., kand.tekhn.nauk; DUKALOV, M.F., kand.tekhn.nauk; ZAYTSEV, N.A.; ZARANKIN, P.S., insh.; ZVYAGIN, P.Z., dotsent, kand.tekhn.nauk; IL'SHTEYN, A.M., kand.tekhn. nauk; KILYACHKOV, A.P., dotsent, kand.tekhn.nauk; KIRICHENKO, I.P., insh.; KRUPENNIKOV, G.A., kand.tekhn.nauk; KUZNETSOV, S.T., kand. tekhn.nauk; KUCHERSKIY, L.V., kand.tekhn.nauk; LINDENAU, N.I., insh.; LIPKOVICH, dotsent, kand.tekhn.nauk; LOKSHIN, B.S., kand.tekhn.nauk; MURATOV, M.L., dotsent, kand.tekhn.nauk; MUCHNIK, V.S., prof., doktor tekhn.nauk; NAYDYSH, A.N., dotsent, kand.tekhn.nauk; NEKRASOVSKIY, Ya.E., prof., doktor tekhn.nauk; NEKHAYEV, G.A., insh.; NUROK, G.A., prof., doktor tekhn.nauk; OVINOV, M.I., insh.; PORTSOV, A.A., insh.; PROSKURIN, V.V., dotsent, kand.tekhn.nauk; RUDNEV, B.A., insh.; SAPITSKIY, K.F., kand.tekhn.nauk; SELETSKIY, R.A., dotsent, kand.tekhn.nauk; SEMENOV, A.P., kand.tekhn.nauk; SKAFA, P.V., insh.; SOKIN, S.D., prof.; SUDOPLATOV, A.P., prof., doktor tekhn.nauk; TIMOSHEVICH, V.A., insh.; FURMAN, A.A., insh.; CHINAKAL, N.A.; SHAKHMEYSTER, L.G., dotsent, kand.tekhn.nauk; TERPIGOREV, A.M., glavnyy red.; LOZNEVA, A.A., red.; NAUMKIN, I.F., red.; OSTROVSKIY, S.B., red.; PANOV, A.D., red.; STUGAREV, A.S., red.; SHELKOV, A.A.,

(Continued on next card)

AVERSHIN, S.G.---(continued) Card 2.
red.; ARKHANGEL'SKIY, A.S., kand.tekhn.nauk, red.; REZNIKOV, G.A., insh., red.; ALESHIN, N.I., red.izd-va; KACHALKINA, Z.I., red. izd-va; PROZOROVSKAYA, V.L., tekhn.red.; NADEINSKAYA, A.A., tekhn.red.

[Mining; an encyclopedic handbook] Gornoe delo; entsiklopedicheskii spravochnik. Glav. red. A.M. Terpigorev. Chleny glav.red.: F.A. Barabanov i dr. Vol.5 [Underground coal mining] Razrabotka ugol'nykh mestorozhdenii podzemnym sposobom. Moskva, Gos. nauchno-tekhn.izd-vo lit-ry po ugol'noi promyshl. 1958. 447 p.
(MIRA 12:2)
1. Chlen-korrespondent Akademii nauk SSSR (for Gorbachev, Chinakal).
2. Chlen-korrespondent Akademii nauk USSR (for Zaytsev).
(Coal mines and mining)

GORBACHEV, T.F.

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